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SIGNAL COMMUNICATIONS IN THE HUNGARIAN AIR DEFENSE SYSTEM

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Introduction**1. Responsibility for Air Defense of Hungary**

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The organization responsible for the air defense of Hungary was National Air Defense and National Air Force Headquarters (Országos Legiero es Legvedelmi Parancsnoksag-OLlep), with headquarters in BUDAPEST. Subordinate to OLlep were the 46th AAA Div and the 55th AAA Div, both of which were located in or near BUDAPEST.

the 46th had its headquarters in Matyas Casern on Robert Karoly Korut in BUDAPEST XIII. The CP of the 46th AAA Div was located in RAKO-50X1-HUM SPALOTA (N47-33, E10-07) Irinyi Pussta, BUDAPEST XV. The strength of the 46th AAA Div was about 300 officers and 3300 EM. The division was composed of three regiments, the 93d, 8th, and the 72d, each of which had nine antiaircraft batteries.

2. History of the Air Defense Organization

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In the summer of 1955 a two-day orientation at headquarters of the 46th AAA Div when the entire air defense organization was discussed. No reference was made to the relationship of the Hungarian Air Defense system to the other Warsaw Pact Countries. The orientation talks were attended by numerous officers from the 46th AAA Div. At that time radar sets to be used in the system were to come from the Feher ut plant in BUDAPEST and that delivery could be expected on a continuing basis until the division had been completely equipped with radar sets.¹ 50X1-HUM

The early warning radar sets were P-5s (Duna) and the gun radars were to be SZON-4s (Drava). the Dravas eventually would be replaced by the SZON-9 (Firecan) radar set which would also be produced at the Feher ut plant. 50X1-HUM

Prior to the time of the orientation at division headquarters there was a total of only four P-5 radar sets in the entire 46th AAA Div. One of these was located at the CP of the division and one at each regimental headquarters, the 93d, 8th, and 72d. in October 1956, four additional P-5s were obtained from an unknown source and assigned to the division as reserve units in storage, not on a standby basis. 50X1-HUM

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the signal

communication systems underwent continuous installation and testing. [redacted] 50X1-HUM

[redacted] the air defense system could be considered complete with respect to the system of communications to be used and that with the eventual assignment of the Drava radar sets to each of the firing batteries in the division, it would become completely operational. [redacted]

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3. Communications in the Budapest Area

a. Signal Communications

Signal communications of the Hungarian Air Defense organization in the Budapest area operated both laterally and vertically. Laterally, communications lines extended from OLLÉP Headquarters to the 46th and 55th AAA Divisions and to the Radar Warning Center. Vertically, lines extended from each of the division command posts to regimental headquarters and down to each battery. Note that lateral communications did not extend from a regiment or battery to its neighbor, except through the switchboard of the next higher headquarters; therefore one battery commander wishing to talk to another could not communicate with him direct. [redacted] 50X1-HUM

Communications networks were two types, an administrative and command net and a reporting net, and each of the networks contained both radio and wire facilities. For the purpose of this report the administrative and command net, which was a combined net, will be referred to as a command net. [redacted] 50X1-HUM

the radio net was the secondary means of communications and was seldom used. (See Annexes A and B for [redacted] concept of each of the networks. [redacted] 50X1-HUM

b. Signal Equipment

(1) Types of Signal Equipment

Signal equipment consisted of a number of different radio sets, radar sets, and telephone equipment. Specific items of signal equipment [redacted] 50X1-HUM

[redacted] were the P-5 and SzON-4 radar sets; the R-10, R-20, R-40, R7-B, and R-50 50X1-HUM

radio sets; and the Hungarian NEV radio receiver. Telephone equipment consisted of the TAI-43 telephone, [redacted]

Switchboards used at battery level were K-10s. [redacted]

(2) Use of Intercommunication Systems

Intercommunications systems were used extensively at the Radar Warning Center, at the division CP and at regimental operations posts. [redacted] 50X1-HUM

[redacted] there were more intercommunication sets being used than any other method of communications, because it was effective, simple to operate, economical, presented a minimum of operational difficulties, and could be implemented quickly. It was not used between one headquarters and another. [redacted] 50X1-HUM

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(4) Supply of Signal Equipment

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[redacted] there was no shortage of signal communications equipment at any level of command in the 46th AAA Div. [redacted]

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[redacted] The only item in short supply was radar equipment. [redacted] the radar shortage would be alleviated by the production of the Precision Mechanical Enterprise (Finco Mechanika Vallalat) on Fehet ut in BUDAPEST; however the revolution of October-November 1956 gave the program a tremendous setback.

c. Training of Radar Operators

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The training of radar operators in the 46th AAA Div received increased emphasis after 1952. [redacted] the same condition prevailed in the 55th AAA Div [redacted] the reason for this was to have trained personnel for the air defense system.

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One school for training radar operators was located at DEBRECEN and was identified as the 16th Independent Radar Technical Bn [redacted]

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Prior to March 1956 the 46th and 55th AAA Divisions operated a combined radar training school which was alternated from one regiment to another during the period 1952 - 1956. After March 1956 each of the divisions began operating separate schools. The 8th Regt was the first to receive the responsibility in the 46th Div. and started a class in March of 1956. [redacted]

[redacted] The length of the course was to have been 10 months.

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[redacted] graduates from the combined schools of the 46th and 55th Divisions appeared to be well qualified. [redacted] instruction received for the most part was theoretical, with some operational and practical instruction in the use of both the P-5 and the Drava (SZON-4 sets. It was estimated that about 75 percent of all students graduated with excellent grades.

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4. Outline of Air Defense Procedure

a. Early Warning Radar Stations

These stations were situated on the western, southern, and eastern borders of Hungary, and if hostile aircraft should violate the boundaries of the country, they would take the first action which would set off a chain of events which would terminate only upon the orders of the Operations Officer at the Radar Warning Center in BUDAPEST.

The early warning radar sites utilized radio and telephone to report an initial contact. They were connected with the Radar Warning Center by cable circuits obtained from the Hungarian Ministry of Post, Telegraph, and Telephone (PTT).

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In addition to the cable circuits, each of the early warning stations was equipped with a Hungarian R-50 radio transmitter to augment the telephonic reporting and to further serve as a means of instantaneous reporting of a target to all other radar locations. [] the radio at the distant radar sites was usually used only in cases of emergency. Each of the distant locations had a Hungarian-produced NEV radio receiver which was tuned to the net at all times.

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The following was [] typical of an actual transmission, either telephone or radio, emanating from a distant radar site to the Radar Warning Center: "Air 01401-642 155 9 1 3 - 2140" This transmission would be repeated from the same station every minute with corrected position of the target. The first five digits would indicate the target to be enemy; if it were a practice mission, the first zero would be dropped and the transmission would read "Air 1401 etc." The next group of numbers would indicate the vector in which the target was located, the height, the number of planes, and finally the time group. If the tracking radar should lose the target, the transmission would be essentially the same except that immediately before the time group, the group "256" would be transmitted, (this was the code for "lost").

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[] the above described system was in use in all of the Warsaw Pact Countries. The vector code was issued from OLLER headquarters and was changed every ten days.

b. Radar Warning Center

The Radar Warning Center operated 24 hours a day, seven days a week. The CO of the Center was always a field grade officer and the Operations Officer was always a captain. Upon receipt of a transmission from the early warning radar station, the Radar Warning Center would immediately alert the Command Posts of the 46th and 55th AAA Divisions, using telephone and/or radio. The Radar Warning Center would also determine whether information was available which would indicate the target to be friendly (such as pre-flight plans of a Hungarian aircraft or other information which would be in the hands of the Operations Officer at the center). If the Operations Officer had such information he would immediately inform the distant radar station and cancel any further tracking or subsequent reporting.

If identification of the target could not be made immediately by the Early Warning Center, other radar stations in the sector would be ordered to pick up and track the target. If the target progressed closer and closer to BUDAPEST without identification being made, alerts would be sounded first at the division CP, then at the regimental CPs (operating 24 hours a day, seven days a week), and finally the firing batteries would be alerted. The target would first be tracked by the P-5 radar set at division level, then by each of the P-5s at regimental level, and finally (in theory only) the "Drava" sets at battery level would take over for fire control.

c. Operational Schedule for Signal Personnel

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Signal personnel required to operate the communications equipment at division level were taken from the signal platoon of Hq and Hq Co. At regimental level radio and wire operations personnel were from the signal platoon. In each firing battery there was one squad of signal personnel responsible for signal communications. Hours of operation for all signal personnel were prescribed by the training and operations section at division headquarters in the form of a duty schedule and it was distributed down to battery level. [] because of the lack of radar equipment at firing battery level, the duty schedule designated which batteries would be on duty and which off duty during a designated period of time; generally, the batteries rotated their duty schedules and a battery would be on alert for one week and off alert for two weeks.

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5. Communications Networks, Locations, and Equipment⁴

a. Radio Nets (See Annex A.)

The use of radio as a means of communication was generally limited to the extent necessary to insure that all personnel were thoroughly trained in its use. As stated previously wire facilities were the primary means of communication for both command and tactical purposes. [redacted] several instances when [redacted] wire and radio were used simultaneously, [redacted] the combination proved to be very effective. 50X1-HUM

Radio nets were in a standby status at all times. The command net extended from OLIEP headquarters to each division and to regiment and battery level. The reporting net extended from the early warning radar sites to the radar warning center, to each division, to each regiment, and to each battery.

There was also an "intercept" net which consisted of a single NEV receiver located at each division headquarters, each regimental headquarters, and at each battery. This NEV receiver was tuned to the early warning communications net and served to furnish early information to the above units of a possible alert. [redacted] intercepted information was not of a command nature and no action was taken at any level of command until instructions were received through command channels. 50X1-HUM

b. Wire Nets (See Annex B)

All wire circuits were obtained from or were installed by the Hungarian Ministry of Post, Telephone, and Telegraph (PTT). These circuits were provided in existing underground cables with additional circuits being established by stringing open wire on existing pole facilities throughout the city. There were ample wire circuits furnished in that there were two underground circuits and two open wire circuits from OLIEP headquarters down to, and including each regiment. These four circuits generally followed different routes to their destinations. [redacted] 50X1-HUM

From each regiment to each battery two underground cable circuits were provided, one for command purposes and the other for reporting. The circuit used for reporting was strapped through on the battery K-10 switchboard direct to the battery radar site. Other lines from the battery K-10 were used for intra-battery purposes.

The two K-20 switchboards at division and at regiment were paralleled and were used for tactical purposes as well as for intra-casern administration.

6. Signal Warehouse

The only signal warehouse [redacted] was the warehouse on Timot ut in BUDAPEST. [redacted] 50X1-HUM

[redacted] the warehouse was actually two warehouses in one area; one of them was operated by the Ministry of National Defense and the other by OLIEP.

The section operated by OLIEP contained signal vans, optical equipment, radar and radar parts, radio transmitters and receivers, ordnance items, power units, and a signal repair shop where all signal equipment in need of fourth or fifth Echelon repair was brought. The employees were a mixture of military and civilian, number unknown.

The section of the depot operated by the Ministry of National Defense contained unidentified artillery, some unidentified radar sets, and vehicles.

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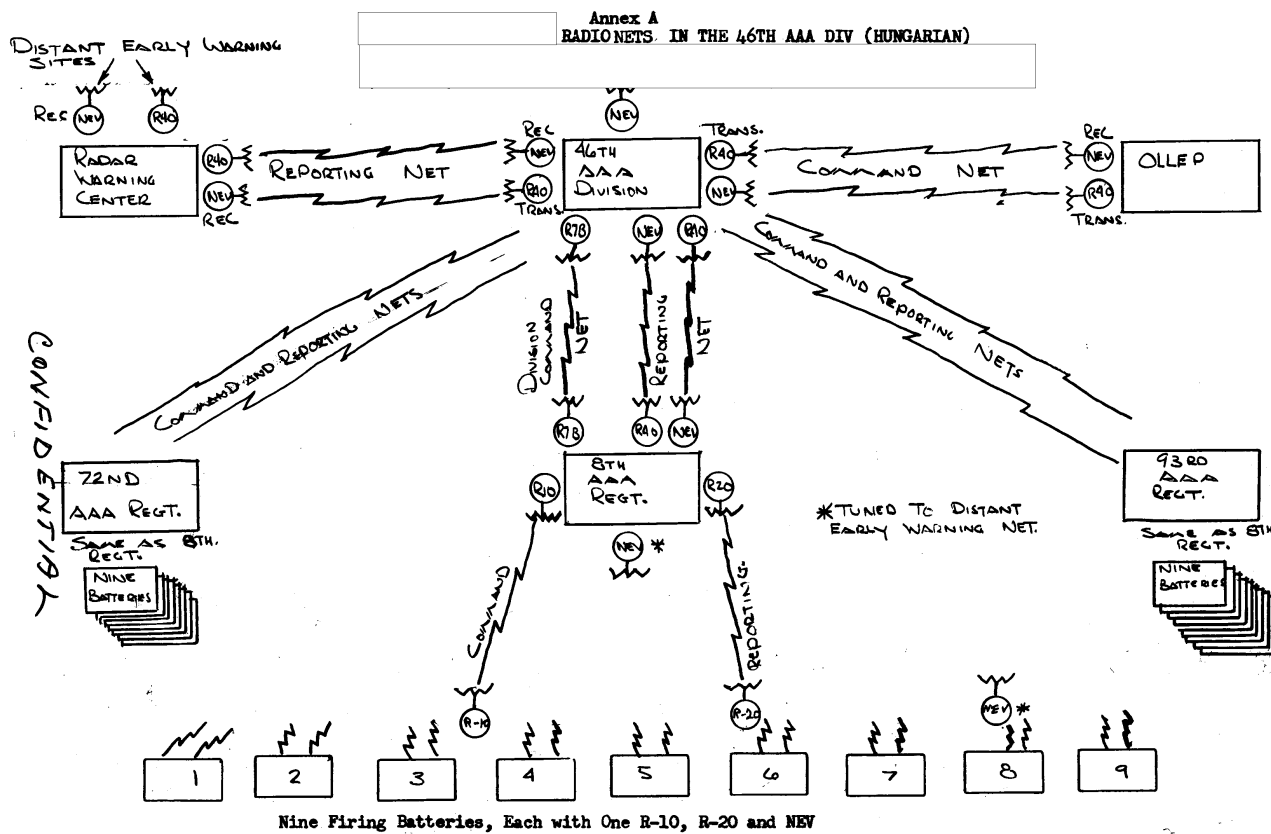
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the OLIEP signal warehouse was formerly in the "Torely" champagne plant in BUDAPEST and that it was moved to the Timot ut location in 1954.

it was referred to only as the "Timot ut Warehouse".

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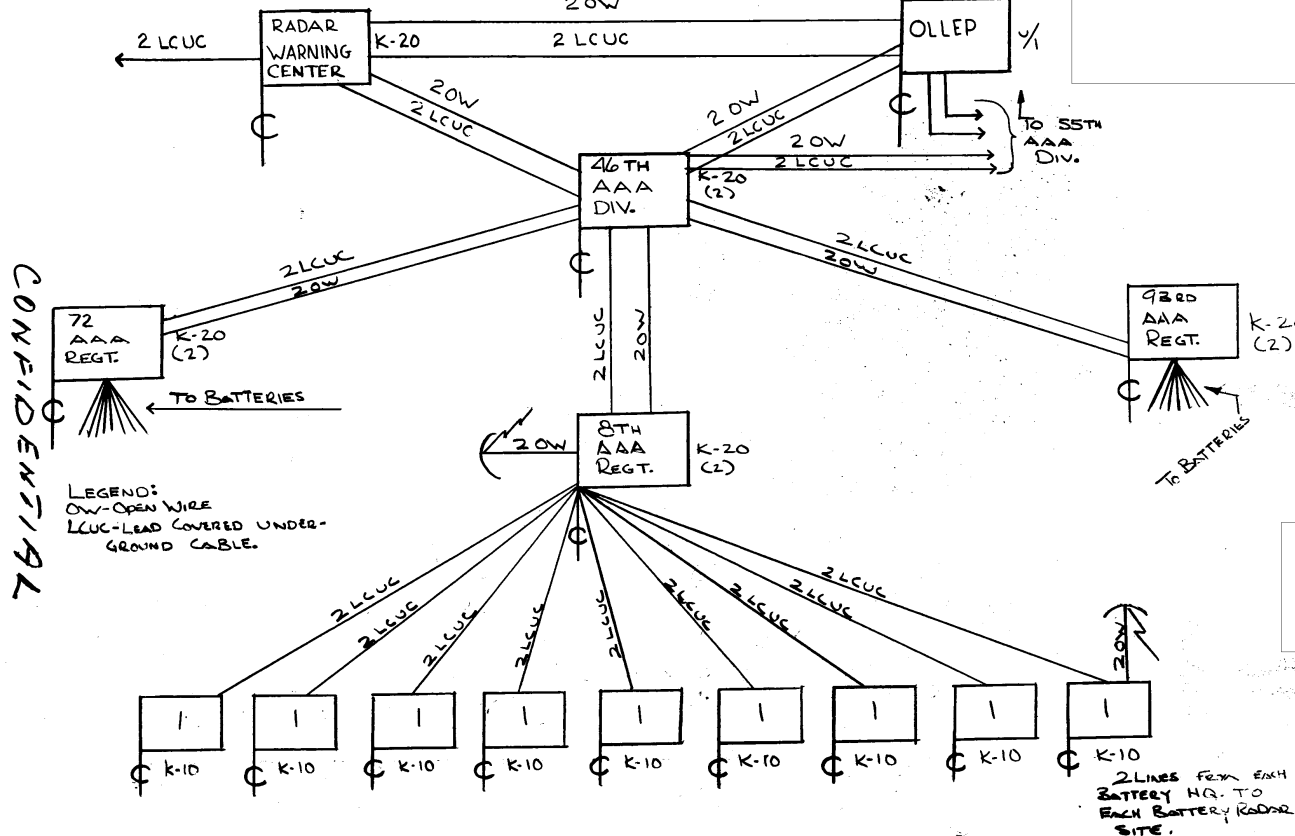
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Annex B
WIRE NETS IN THE 46TH AAA DIV (HUNGARIAN)



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